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February 21, 1997

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Mr. William F. Caton
Acting Secretary
Federal Communications Commission
1919 M Street NW, Room 222
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Federal Communications Commission
Office of Secretary

Re: Ex Parte Presentation -- MCI/BT Transfer of Control
GN Docket No. 96-245

Dear Mr. Caton:

Today, the undersigned counsel supplied a copy of the attached document to Kerry Murray of the FCC staff. The document is the NERA study on equal access that the UK Office of Telecommunications ("OFTEL") commissioned in 1995 in connection with its consultation on equal access entitled "Cost Benefit Analysis of Equal Access." An original and one copy of this notice are being submitted to the Secretary of the FCC, with additional copies to ITS, the International Reference Room, and the Wireless Reference Room, in accordance with the Commission's December 10, 1996 Public Notice in this proceeding.

Sincerely,

Joan M. Griffin
Its Attorney

cc: Kerry Murray



Cost Benefit Analysis of Equal Access

**A Consultation Paper issued by the
Director General of Telecommunications**

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July 1995

**Published by
The Office of Telecommunications
50 Ludgate Hill
London EC4M 7JJ
Tel: 0171 634 8700
Fax: 0171 634 8943**

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1. INTRODUCTION

1.1. Terms of Reference¹

NERA, in association with Smith System Engineering, was commissioned by Oftel to undertake a cost-benefit analysis of the introduction of equal access into the UK by BT and any other local operators who have, or can in future be expected to have, a market share in excess of 25%. The terms of reference of the analysis are restricted to defining equal access as a facility which enables customers to access an operator² of their choice without dialling additional digits (compared to accessing BT or other operators). Broader issues, which might be considered as part of a wider definition of equal access, have not been included in this study³.

This analysis, therefore, considers the forms of equal access described in Condition 13A of BT's licence, namely:

- pre-selection: whereby telephone users may pre-select a long distance or international operator of their choice (once they have registered for billing etc.). All long distance and international calls that they make would then be automatically routed to that operator. Different operators may be selected for domestic long distance and international calls;
- pre-selection with call-by-call over-ride: whereby users who have already pre-selected a particular operator could prefix an individual dialled call by a short code, and thus re-direct that call to an operator other than their pre-selected choice;
- call-by-call selection: whereby telephone users may choose a long distance or international operator each time they make a call by pre-fixing each dialled number by an appropriate short code. Every long distance operator (including BT) would have its own designated prefix code. Users who opted to take up this facility would be required to dial a prefix code for each and every long distance or international call, otherwise the call would fail.

¹ The full terms of reference to this study are contained in appendix A.

² For the purposes of this study, international simple resale (ISR) operators have been included as operators that would benefit from equal access.

³ These broader issues may include access to network and peripheral facilities and whether other operators have access to:

- unbundled points of BT's network (e.g. local loop);
- signalling used by BT services;
- IN (intelligent network) functions used by BT services;
- databases used by BT services.

Although the analysis is based upon the definitions of equal access contained in BT's licence, it is not restricted to the combinations of pre-selection and call-by-call equal access currently suggested in the licence. For example, we have considered cases where BT (and other local operators obliged to provide equal access) are required to offer just pre-selection, or just call-by-call selection. We have also considered the case where BT is required to offer a call-by-call over-ride to pre-selection (not where BT itself is given the option). Furthermore, we have examined one possibility not envisaged at all in BT's licence, namely that local operators are required to provide billing services to any equal access long distance or international operator that requires them.

The cost-benefit analysis is based on a number of underlying assumptions, the most important of which are that:

- all equal access operators would receive a 4 digit access code;
- points of interconnection would be unaffected by equal access;
- up to 30 long distance and up to 30 international operators might require equal access at any one exchange;
- number portability is available to those customers changing their local network operator (exchange line provider);
- the current regulatory regime is assumed to continue until 1997;
- for the period beyond 1997, ADCs will be replaced by a system in which interconnection payments are based on incremental costs with some form of mark-up to recover common costs. This corresponds to Options 2 and 3 in the Oftel Consultative Document "A Framework for Effective Competition", December 1994. In the Consultative Document, Oftel suggests a number of sub-options for setting those mark-ups, some of which are recognised to have practical or other difficulties (e.g. ECPR and Ramsey Pricing). For the purposes of this cost-benefit analysis, a system of equal mark-ups is assumed. Other forms of mark-up might change the relative prices of local, national and international calls, but the relative prices of different operators, which are what matters in the context of this study, are unlikely to be significantly affected as all operators, including BT, will be obliged to pay the same charges;
- in addition to interconnection payments, it is assumed that, when ADCs have been abolished (beyond 1997), competing operators will be required to contribute to the cost of BT's USO (universal service obligation). Research commissioned by Oftel indicates that the current size of BT's USO is in the range of £90 million to £160 million, but this can be expected to fall as a result of BT's continuing tariff re-balancing and efficiency improvements;

- as the cost-benefit analysis is being undertaken from a national point of view, the discount rate used is the one typically used for public sector projects, namely 6% in real terms.

1.2. Overview of Methodology

1.2.1. Selection of options

There are a number of options for implementing equal access in the UK. The resulting costs and benefits are likely to vary according to the option chosen. At the beginning of the analysis we have specified the options (consistent with the project terms of reference) that will be examined in detail (see Section 2.4). Certain options have been eliminated on the basis that they are not likely to be practical in the UK context. However, the options chosen for detailed analysis provide results covering the spectrum of all possible options consistent with the terms of reference. The options considered are:

- Option 1 users choose between:
- remaining as they are;
 - pre-selection with call-by-call over-ride;
- Option 2 users choose between:
- remaining as they are;
 - pre-selection with call-by-call over-ride;
 - call-by-call selection;
- Option 3 users choose between:
- remaining as they are;
 - pre-selection;
 - call-by-call selection;
- Option 4 users choose between:
- remaining as they are;
 - call-by-call selection.

1.2.2. Benefits of Equal Access

In order to assess the benefits of equal access it is necessary to compare the situation given equal access with that which would prevail in its absence (the "counterfactual"). For the purposes of this study the counterfactual is "easy access", which is currently provided by BT to Mercury's indirect customers. "Easy access" requires BT to provide calling line identification (CLI) to the relevant competing long distance operator so that the caller can be identified as a customer of that operator and can be billed by it.

For each equal access option, the potential benefits fall into two main categories:

Type I benefits which accrue to:

- those customers who would have chosen easy access anyway, but now may enjoy additional benefits (e.g. fewer dialled digits) provided by equal access and;
- those customers who, as a result of equal access, migrate to a new long distance or international operator and benefit from lower prices⁴.

Depending on the equal access option under consideration, migration between operators would be assisted by one or all of the following factors:

- customers might be made more aware of competitive alternatives;
- customers would not be required to invest so much time and money (including any necessary CPE alterations) in changing to a new operator;
- customers could try out new operators on a call-by-call basis with no longer term commitment;
- customers would avoid having to dial additional digits in order to access new operator networks (in some cases).

Type II benefits which accrue to all customers of existing networks. These include efficiency gains and price reductions that are stimulated by increased competition resulting from the greater uptake of equal access services. Any consequent change in the intensity of competition between local network operators and the resulting impact on efficiency and prices will also need to be taken into account.

1.2.3. Costs

The costs of equal access cover:

- local network implementation costs (for BT and any other local operator required to provide equal access);
- costs (and some savings) for other long distance operators;
- any extra costs of network capacity or operations that result from increased customer churn rates;

⁴ Until other local network operators are obliged to provide equal access, it is unlikely that there will be migration of their customers to equal access services, because of the loss of total service discounts that would be involved.

- end user equipment costs (e.g. software modifications).

1.2.4. Discount rate

As the cost-benefit analysis is being undertaken from a national point of view, the discount rate used is the one typically used for public sector projects, namely 6% in real terms. The arguments for the use of this rate have been set out by HM Treasury⁵.

1.2.5. Interviews

In carrying out this study we consulted a number of companies and organisations in the UK telecommunications market to seek their views on the costs and benefits of equal access (as defined in the terms of reference). A list of those organisations and companies interviewed is given in Appendix B, and we would like to thank those concerned for their time and effort. It should be added, however, that the assumptions employed and the results of this report are those of NERA and Smith System Engineering, and may not necessarily be those of the organisations or people we interviewed.

1.3. Structure of Report

In Chapter 2 we outline the equal access options that have been evaluated. We then go on to assess the benefits (Chapter 3) and costs (Chapter 4) of each equal access option. Finally, in Chapter 5 we present the results of the cost benefit analysis, together with sensitivity analyses.

⁵ See HM Treasury *Economic Appraisal in Central Government: A Technical Guide for Government Departments*, HMSO, April 1991. For completeness, a sensitivity test using a 10% rate has been carried out in Chapter 5.

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2. OPTIONS FOR EQUAL ACCESS

2.1. Definitions

The equal access options considered in this report consist of one or more of the following elements:

- operator pre-selection: whereby telephone users may pre-select a long distance or international operator of their choice (once they have registered for billing etc.). All long distance and international calls they make are then automatically routed to that operator. Different operators may be selected for domestic long distance and international calls.

The method by which telephone users pre-select a particular operator has a significant effect on the costs and benefits of equal access, and is discussed further in Section 2.2.

- pre-selection with call-by-call over-ride: whereby users, who have already pre-selected a particular operator, can prefix an individual dialled call by a short code, and thus re-direct that call to an operator other than their pre-selected choice;
- call-by-call selection: whereby telephone users may choose a long distance or international operator for each individual call by pre-fixing each dialled number by an appropriate short code. Each long distance operator (including BT) would have its own designated prefix code. Users who opt to take up this facility would be required to dial a prefix code for each and every long distance or international call, otherwise the call would fail.

The method by which telephone users would be billed for calls made by call-by-call selection (or through an over-ride of pre-selection) is crucial to an assessment of the benefits, and is discussed in Section 2.3.

2.2. Methods of Pre-selection

Pre-selection is the most common form of equal access, being used in both the US and Australia⁴. It is therefore useful to begin by reviewing the implementation of pre-selection in these two countries.

⁴ It was also used for a time by Kingston Communications through class marking of lines for some customers, but this service is no longer provided.

2.2.1. Pre-selection in the US

Pre-selection was introduced into the US from September 1984 as local exchanges were given equal access capabilities in rolling conversion programmes. To begin with, once an exchange had been converted to equal access, there was no immediate requirement for all customers to be balloted on their preferred operator. By early 1985 it became apparent that only around 30% of customers connected to equal access exchanges were pre-selecting a long distance operator (either AT&T or one of the other long distance carriers), whilst the remaining 70% were staying with AT&T by default.

In May 1985 the FCC released an Order specifying a balloting and allocation plan to be used by local exchange carriers (LECs) on the introduction of equal access into their exchanges (and a retroactive balloting process in cases where equal access had already been introduced). This process required a re-ballot of customers who failed to respond to the first ballot, after which customers who did not respond to either ballot had to be assigned a long distance carrier in proportion to those who did respond in the first ballot. Under this system, LECs found that between 60% and 75% of their customers now pre-selected a long distance carrier, whilst the remaining 25% to 40% were assigned a carrier. This increase in pre-selection has been argued to have been a major factor behind AT&T's loss of market during the late 1980s. In particular, its share of inter-state switched traffic fell from 82% in 1985⁷ (when it had already faced eight years of competition from MCI without equal access), to 63% in 1991⁸ when equal access had been rolled out to over 90% of access lines in the US.

2.2.2. Pre-selection in Australia

Australia licensed a second carrier, Optus, in December 1991. The new carrier's network was operational in major cities by November 1992, and was available to 65% of the population by the end of 1993. Within 18 months of launch it had captured about 15% of national and international traffic. Originally access to the Optus network was through a simple dialling code prefix - "1". If this prefix was omitted calls would be routed over the Telstra network. However, it was always intended to move to an equal access system of pre-selection with call-by-call over-ride using a four digit access code.

Pre-selection balloting began in Australia in July 1993, and will continue on a sequential city-by-city basis until 1997. The process takes the form of a first ballot, with the option for Optus (the second carrier) to call for a second ballot in cities where the response rate is less than 60%. Non-respondents remain with their existing carrier (in contrast to the US system where they were assigned). Table 2.1 gives details of the response rates and carrier shares of lines. It is likely that the share of traffic captured by Optus exceeds its share of

⁷ The 12 months to June 1985. Calculated from FCC *Statistics of Communications Common Carriers*.

⁸ The 12 months to June 1991. Calculated from FCC *Statistics of Communications Common Carriers*.

lines since it will have tended to have captured customers with higher than average calling rates.

Table 2.1:
Results of Australian Pre-selection ballots

	Date	Second ballot	Response rate	Optus Share share of lines
Canberra	1993	No	52%	12%
Sydney	1993	Yes	58%	18%
Melbourne	1993	Yes	56%	14%
Mornington	1993	Yes	50%	10%
Geelong	1993	Yes	55%	10%
S.E. Queensland/Brisbane	1994	Yes	53%	14%
Penrith/Blue Mountains	1994	Yes	43%	10%
Perth/Pinjarra	1994	Yes	48%	11%
Adelaide	1994	Yes	51%	14%
Tas Hobart/Devon	1994	Yes	50%	8%
Newcastle	1994	Yes	56%	8%
Gosford	1994	Yes	48%	9%
Windsor	1994	Yes	42%	8%
Northern Territory	1994	Yes	48%	9%
Darwin/Alice Springs	1994	Yes	56%	11%
Wollongong	1994	Yes	50%	9%
Campbelltown	1994	Yes	42%	9%
Ballarat	1994	Yes	48%	6%
Bendigo	1994	Yes	49%	4%
Meekatharra/Bribie Island	1994	No	35%	4%
Bribie Island	1994	No	31%	5%
Woomera	1994	No	35%	5%

Source: Austel

It is interesting to note that, even before balloting took place, Optus had already captured 15% of the national long distance market. This was undoubtedly assisted by the simplest possible non-equal access code - "1", and relatively low interconnection charges based on directly attributable incremental cost.

2.2.3. Pre-selection in the UK

From the experience of the US and Australia, it appears that effective pre-selection in the UK would require:

- balloting of all customers;

- an option of a second ballot if response rates are low;
- a gradual roll-out schedule for equal access. This would be shown, in advance, to all operators, and would allow new operators (with less marketing resources than BT) to compete fairly against BT on an area-by-area basis.

We have assumed that these would be features of pre-selection in the UK.

The US practice of proportional assignment of non-respondents appears to have been very effective in terms of increasing market share for competitors to AT&T. However, in the UK, it would be likely to be viewed dimly by many customers who found themselves assigned to some "unknown" telephone company (who may be more expensive for some types of calls). It would also require a change to BT's licence, which currently states that:

13A.5(a) *In this Condition "Equal Access" means a facility provided to an Operator whereby he can arrange with a customer of the Licensee that, following a request by that customer to the Licensee, the customer may choose over which public telecommunications system, being a system run by a Long Line Public Telecommunications Operator, to route National and International calls made by means of an Exchange Line provided to him by the Licensee.*

(Note: our emphasis.)

Therefore, we assume that, in the UK, non-respondents would remain with BT, ie. the position would be similar to that in Australia.

2.3. Methods of Billing under Call-by-call Selection

Pre-selection implies a "long term relationship" between the customer and his or her pre-selected operator. This operator will tend to carry most (if not all) of the user's long distance calls. Under these circumstances it is likely that the pre-selected operator will want to (and be able to) undertake the billing for the calls that use its network.

Under call-by-call selection, where there is no formal "long term relationship" between user and operator, long distance operators may still prefer to bill customers directly in order to maintain customer contact for marketing purposes. However, this will require some process of registration by the user (similar to that currently in operation for customers joining Mercury's or Energis's indirect services) to ensure that billing can be carried out to the correct name and address, and that the customer is credit worthy. This is especially important for international calls where bills can be high and the long distance operator can incur significant liabilities in respect of payments to far end operators. The requirement for registration could have an inhibiting effect on the growth of new long distance operators. In particular, it might deter customers from spreading their long distance calls over a number of operators, perhaps in order to experiment with a range of new operators.

Furthermore, many customers may regard it as an inconvenience to receive two or more telephone bills.

An alternative could be for the local operator (e.g. BT) to carry out billing on behalf of each selected long distance operator, thus allowing the user to send calls via any such long distance carrier on impulse (without registration). This would be similar to the system currently employed in Hull, where any customer can select either BT or Mercury on a call-by-call basis and, in either case, is billed through Kingston Communications (their local operator). Such an arrangement is likely to be economically efficient since the incremental cost of including long distance calls on a customer's existing bill is likely to be substantially less than the stand alone cost of billing these calls separately (especially if the customer spreads his or her calls around a number of long distance operators). Clearly, the local operator would require payment for such a service to cover both direct billing costs as well as credit checks and bad debt provision. Since only the existing local operator could provide this billing service and, in the case of BT, this operator also competes for long distance calls, independent adjudication (probably by Oftel) of the terms and conditions for these billing services would be likely to be required.

There are, however, reasons why long distance operators may prefer to do their own billing. Firstly, it maintains end-customer contact which allows the efficient dissemination of service information and advertising. Secondly, it allows the provision of additional billing options (e.g. monthly billing, different levels of itemisation, account codes for each call, or different bill formats). The long distance carriers we spoke to were generally in favour of doing their own billing, suggesting that the marketing or other benefits are perceived to be at least equivalent to the disadvantage of foregoing business from "impulse" customers and the extra costs of billing (stand alone rather than incremental costs). Nevertheless, local operator billing remains a possibility under call-by-call selection which some long distance operators might wish to take up.

2.4. Options for Equal Access in the UK

Based on the definitions in Section 2.1, we drew up a number of service options for equal access:

- Option 1 users choose between:
 - remaining as they are;
 - pre-selection with call-by-call over-ride;
- Option 2 users choose between:
 - remaining as they are;
 - pre-selection with call-by-call over-ride;
 - call-by-call selection;
- Option 3 users choose between:
 - remaining as they are;

- pre-selection;
 - call-by-call selection;
- Option 4 users choose between:
- remaining as they are;
 - call-by-call selection.

For each of these options, all users have the choice of remaining with their current operator, ie. no change will be forced on any telephone user.

Other options are possible. For example, users could be offered options that include both pre-selection and pre-selection with call-by-call over-ride. However, since pre-selection offers users nothing in addition to pre-selection with call-by-call over-ride, such options have been ignored.

We have also excluded pre-selection on its own, ie. without either a call-by-call over-ride or a call-by-call selection alternative. This is because customers would be locked into one supplier for national or international calls which may, in certain cases, be completely inappropriate for certain routes or call types (because of price⁹, or because of ability to complete the call). This form of equal access would also prevent users from accessing their preferred operator when using another line for which a different operator had been pre-selected. At worst, this form of equal access could leave users exposed to the detrimental effects of "slamming" - where users are "deceived" by various means to change their long distance operator without good reason¹⁰. It may also be the case that this option (as well as Option 4) is in conflict with BT's licence, which requires that equal access:

...be exercisable in either of the following ways, at the option of the customer:

- (i) *by pre-selection,...*
- (ii) *on a call-by-call basis,...*

⁹ This may result from tariff changes after a customer has pre-selected an operator.

¹⁰ Although it should be noted that it may be possible to protect consumers from some of the worst effects of "slamming" by rigorously policing the claims and comparisons made by operators in their advertising, and insisting on "cooling-off" periods (as used in selling life assurance policies).

3. BENEFITS AND TAKE UP OF EQUAL ACCESS

3.1. Conceptual Framework

For the purposes of this study, the potential benefits resulting from the introduction of equal access have been classified into two main categories:

- Type 1' benefits which accrue only to subscribers to the equal access services offered by new long distance and international operators. These might include lower call prices, net of registration fees and other costs associated with moving between operators, better quality, more services features and the increased ease of making calls (eg. fewer dialled digits);
- Type 2' benefits which accrue to all telephone subscribers. Equal access lessens the barriers to customer migration between operators and hence is likely to lead to an increase in competitive pressure in the telecommunications market. This in turn can be expected to result in increased technical and commercial innovation and greater efficiency and hence reduced costs and prices.

The measurement of each of these is discussed in more detail below:

3.1.1. Type 1 Benefits

The nature and extent of Type 1 benefits depends on how subscribers respond to equal access and also whether, in its absence, they would have moved anyway to a new long distance operator. Three different groups of subscribers can be identified, namely:

- those who move to a new long distance or international telecommunications operator as a result of the introduction of equal access. For these subscribers, the benefits of equal access are the savings from lower long distance and international call bills less any costs associated with moving to another operator (eg. the registration fee);
- those who already use the easy access (or indirect) service of a new long distance operator or would migrate anyway in the absence of equal access. For these subscribers, the benefits of equal access are limited to the increased ease of making calls (eg. the need to dial fewer digits, a reduction in the number of misdialled calls, and the avoidance of foregone call discounts as a result of failing to dial the extra digits to access the easy access service and hence having the call default to BT's network);
- those who continue to purchase their long distance and international calls from BT or alternative local network operators. For these subscribers, the introduction of equal access offers no Type 1 benefits.

BT subscribers will switch to alternative providers of long distance and international call services if the call bill saving net of any registration fee ("discount") exceeds some minimum required level ("threshold"). In Figure 3.1 the pre equal access threshold discount is d_0 and this, given the discounts offered, results in l_0 customer lines subscribing to indirect national and international call services. Following the introduction of equal access, the threshold discount falls to d_1 and the number of indirect service lines increases to l_1 .

Various factors underlie the post equal access threshold discount, including:

- the cost of having to reprogramme terminal equipment;
- the cost of having to dial extra digits when overriding a pre-selected carrier in order, for example, to take advantage of a special deal offered by a competing operator;
- the cost, in the form of lost call bill savings, as a result of failing to remember to dial extra digits to override the pre-selected carrier in order to benefit from lower prices elsewhere;
- the fact that consumers do not always react to potential small call bill savings offered by other operators even though it would be rational for them to do so.

The costs listed above are tangible¹¹ but difficult, if not impossible, to estimate. No figures are available on how the stock of telephones breaks down between rotary dial, blue button and memory function models, and the extent to which consumers make use of the features offered. The frequency with which equal access customers will want to use the override facility is unknown, as is the likelihood of forgetting to use it. As a result, we do not know what proportion of the threshold discount is represented by these costs. At one extreme, all the threshold discount could be accounted for by these costs. Alternatively they might amount to very little. In practice, the answer is likely to lie somewhere in between.

As a result, when estimating Type I benefits, we have assumed that half the post equal access threshold discount is accounted for by these costs. Consequently the benefits to those who change operators as a result of equal access have been estimated as the difference between discounts received (net of registration fees) and the post equal access threshold discount (area B in Figure 3.1) plus half the post equal access threshold discount (area C). However, we have also carried out two extreme sensitivity tests: one where it is assumed that these costs amount to very little, in which case Type I benefits to induced movers are measured as the value of discounts received less registration fees (ie. area B plus areas C and D); and one where it is assumed that these costs account for virtually all

¹¹ This contrasts with the situation for number portability where there were no equivalent costs. See Cost-Benefit Analysis of Number Portability, Report by NERA for OfTel, December 1993.

the post equal access threshold discount, in which case Type 1 benefits are measured by area B alone.

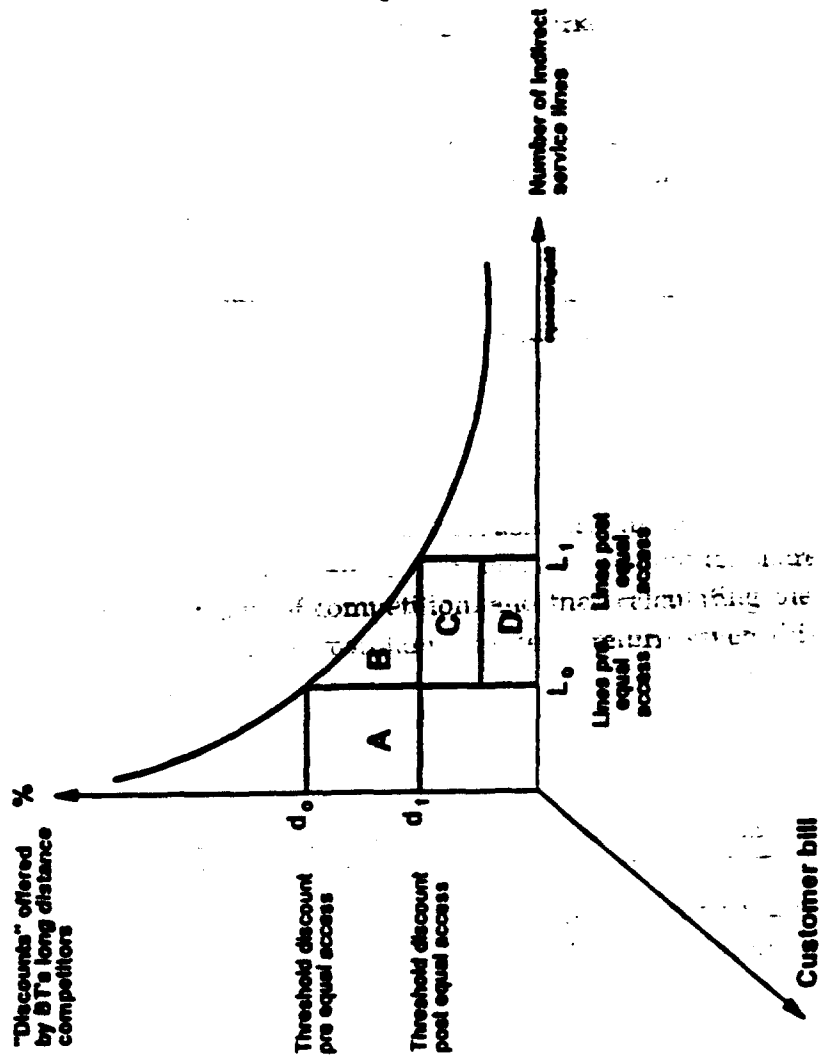
For those who would have changed operators irrespective of the introduction of equal access, the Type 1 benefits are measured by the change in the threshold discount (area A in figure 3.1).

A number of other features of the analysis of Type 1 benefits warrant clarification:

- "discounts" do not just include price differentials but also take account, in broad terms, of the differences between operators in network functionality, product features and responsiveness to customer needs. Equal access requires more processing at the local exchange than easy access, particularly in the case of calls routed via preselected carriers. It is assumed here that the same level of network availability and call set-up time is required under equal access as is currently offered, and that DLE processor power is increased where required to offer adequate service;
- those customers, for whom the "discounts" offered by new long distance operators exceed the threshold discount, do not all migrate immediately. The proportion that migrates will be determined by awareness of the existence of alternatives to BT, the size of the "discounts" offered to different customer segments and the geographical rollout of alternative networks;
- the benefits to customers from lower prices do not necessarily translate into benefits to the economy as a whole. If, for example, the discounts offered by new operators purely reflect reduced profit margins or cream skimming (ie the new operators do not have lower incremental costs than BT), the gains to consumers plus the profits to new operators will be largely offset by the loss of profit to BT.¹² On the other hand, if the discounts reflect lower costs, then the consumer benefits will not be offset. In practice we would expect new operators to have lower costs because of economies of scope (eg. the use of electricity infrastructure in the case of Energis) and because they are start up operations able to minimise their labour costs and not burdened with an inheritance (albeit a diminishing one) of nationalised monopoly manning levels. Against that, indirect calls will involve one or two extra transit switching stages, given interconnection of BT and alternative long distance operators at the transit switch (DMSU) level;
- for the reasons explained in Section 3.2.6, the level of Type 1 benefits generated by equal access is likely to be affected by the extent to which it is rolled out before or after the networks of alternative direct service providers (eg. the cable companies).

¹² There will be some residual gain because lower call prices will encourage a larger volume of calling.

**Figure 3.1:
Type 1 Benefits of Equal Access**



A = benefits to customers who would switch operators in the absence of equal access
 B+C = benefits to customers who switch operators as a result of equal access
 D = tangible costs that form part of the post equal access threshold discount

All these factors are taken into account in the assessment of Type 1 benefits and where appropriate the assumptions made have been subjected to sensitivity tests.

3.1.2. Type 2 Benefits

The introduction of equal access will lead to an increase in competitive pressure in the telecommunications market place. This in turn can be expected to generate a variety of benefits that will accrue to all telephone users and not just to those customers who make use of equal access services. These Type 2 benefits include:

- increased productivity and cost efficiency;
- the movement of prices towards costs;
- increased technical and commercial innovation;
- increased consumer choice.

This study has focused on productivity and efficiency improvements, because the benefits of increased consumer choice and increased technical and commercial innovation are virtually impossible to measure, while the benefits from the movement of prices towards costs will be relatively small.¹³ Focusing just on the first category of benefits is likely to generate a conservative estimate of Type 2 benefits, although some of the effects of increased technical and commercial innovation can be expected to feed through into efficiency improvements and hence be picked up in the analysis.

In order to derive an estimate of the benefits of efficiency improvements it is necessary to specify a quantitative link between increased competition and the consequent reductions in unit costs. This in turn raises a number of questions:

- how is the change in the level of competition measured?
- what evidence exists about the relationship between changes in the level of competition and changes in efficiency?
- is the relationship likely to be linear?

¹³ For the existing level of output the benefits to consumers from a reduction in prices are offset by a loss in profits. However both consumers and producers benefit from the additional output generated by price changes. This additional output will be relatively small given the low market elasticities of demand for telecoms services - estimates range from 0.1 to 0.4 based on operator estimates and published estimates averaged over different business and residential call types.

In this study the change in BT's market share has been used as the measure of the change in competitive pressure¹⁴. This then allows us to use the evidence of a number of empirical studies that have attempted to identify the impact of liberalisation and changes in market share on the costs of dominant telecommunications operators. Given an estimate of BT's market share loss as a result of equal access, it is then possible to derive an estimate of the impact on BT's costs.

The estimate of Type 2 benefits generated by this procedure is necessarily subject to a wide margin of error and we have therefore carried out a number of sensitivity tests in Chapter 5.

It should be noted that, provided that the incremental costs of new entrants are no higher than those of BT and that no new operators are attracted into the market solely as a result of equal access, there will be no increase in overall industry costs as a result of customer migration.¹⁵ Given that new entrants will, if anything, tend to have lower incremental costs than BT and that equal access has only a small impact on migration the above conditions are likely to hold.

3.1.3. Other Key Issues

In any cost benefit analysis it is necessary to specify the states of the world that would exist with and without the measure or development being analysed. In this study, the costs and benefits of equal access (under each of Options 1 to 4) are measured against a state of the world in which "easy access" is available to 95% of the telephone users. This is the "counterfactual" that is referred to as Option 0. "Easy access" is the service which BT offers to other operators whereby calls prefixed by a correct access code are routed over BT's network to the other operator's point of interconnection along with the CLI (calling line identity), enabling the other operator to identify the customer making the call (thus saving an account number or authorisation code).

It is also important to state that our assumption is that four digit access codes will be required for call by call equal access, for calls made using an override of the preselected carrier and for easy access. This assumption means that Mercury will, in due course, need to move over to 4 digit access codes whether or not there is equal access.

¹⁴ Change in market share is not a perfect indicator of the change in competitive pressure. For example, it could be argued that the change in BT's market share understates the change in competitive pressure because it leaves potential competition out of account. If all entry barriers were eliminated, competitive pressure would be increased dramatically without any necessary changes in market shares, because of the impact of potential competition. On balance, and in the context of this study, we consider change in market share to be the best available proxy for change in competitive pressure.

¹⁵ This assumes that incremental costs are broadly constant over the small range of output under consideration.

3.2. Type I Benefits

A variety of factors can be identified which may be affected by equal access in a way that generates Type I benefits. The most important ones (in no particular order) are:

- customer lack of awareness of the alternatives;
- customer unwillingness to invest the time and money (including any necessary CPE alterations) involved in changing to a new operator;
- an unwillingness to "sign up" to an untested newcomer;
- customer unwillingness to dial additional digits to make telephone calls.

The impact of equal access on each of these factors, and the implications, are considered below. In general there is considerable uncertainty about the magnitude of these effects. For this reason, the conclusions from the cost-benefit analysis have been subjected to a wide ranging sensitivity analysis (see Chapter 5).

3.2.1. Awareness of the alternatives

It may be the case that pre-selection, which involves balloting, makes potential customers aware of new operators sooner than would otherwise be the case. If so, this would increase the rate at which customers migrate to cheaper long distance and international operators. On the other hand, in mature competitive markets, companies achieve customer awareness through their own advertising campaigns, and it is normal for a new entrant to advertise widely. It is not, therefore, likely that a pre-selection ballot would be a substitute for this activity, nor is it clear what the additional impact on awareness would be.

Nevertheless, it is likely that pre-selection ballots will have some impact in raising customer awareness of the existence of competitors in newly liberalised markets. Market research commissioned by Oftel in 1994¹⁶, covering a sample of 3,000 households in the UK, indicated that 77% of consumers were aware of telecommunications companies other than BT. This leaves 23% who were unaware of the existence of alternative telephone companies. On the face of it, this suggests that pre-selection ballots might increase the rate of customer migration to new operators by up to 30% (ie. $23/77=30\%$) through raising customer awareness. This, however, ignores the fact that a higher proportion of those who are already aware of the existence of competitors, and are latent migrants, may be spurred into action by the ballot.

On the other hand, there are reasons to suppose that the effect on those that were previously unaware of competitors may be lower than is implied by the 30% migration

¹⁶ Reported in Oftel, 1994 Annual Report, page 55.

uplift factor. The same survey for Oftel also found that 8% of households have no telephone, and we know from BT data that a further 9% have call bills of less than £5 a quarter and so are unlikely to be interested in new competitors (especially as most of them will receive a low user discount with BT). Since competing operators are of no direct interest to these households, we would expect them to form a higher than average proportion of those customers that are unaware of the existence of competition.

It is also the case that awareness of competition is likely to increase over time. Both Energis and Mercury have been advertising their long distance networks extensively and, in addition, consumer magazines have discussed the choices available to residential users (e.g. "Which" magazine published by the Consumers Association with a circulation of 682,000 and a larger readership - particularly see issues of August 1992 and April 1994). By the time it is possible to implement equal access (ie. by 1997 - see below) awareness of competition will have increased anyway.

Given the uncertainty about the impact of a pre-selection ballot on the rate of customer migration, the cost benefit analysis has been undertaken using a range of alternative assumptions.

3.2.2. Reluctance to invest in the initial cost of changing to a new operator

Under easy access, changing to a new operator involves certain costs. These include the user's own time and effort in investigating the alternatives, registration fees, and altering CPE to insert access codes (either installation of some additional equipment such as a smart box or a blue button phone, or re-programming of a PBX or a telephone memory button). Some of these costs may be saved under some forms of equal access. However, these savings are unlikely to be large because:

- users will still want to spend time investigating alternative operators, especially under pre-selection equal access;
- there may be savings in registration fees to the extent that there are cost savings if local operators do the billing for call-by-call selected calls. However, since most long distance operators are unlikely to be willing to sub-contract their billing to a competitor in this way, and in any event, would want their own independent verification systems, this saving is not likely to be great;
- CPE will still need to be re-programmed with commonly used access codes for overrides (for pre-selection) and for call-by-call selection.

Therefore, we reached the conclusion that the savings in the initial costs of charging operators, that are brought about by equal access, are not material (and indeed there may be some additional costs which are considered in Chapter 4).